compounds capable of exerting an effect on an intracellular biological or chemical process, said method comprising steps of:

a. providing a plurality of reaction vessels;

b. providing a plurality of cells;

c. providing one or more test compounds;

d. introducing at least a subset of said cells into each of said reaction vessels;

e. introducing at least one said test compound into each of said reaction vessels;

f. contacting said test compounds with said cells in each of said reaction vessels under conditions suitable for at least one of the test compounds to exert an effect on an intracellular biological or chemical process;

g. contacting a ligand with said cells in each reaction vessel under conditions suitable for said ligand to associate intracellularly with at least one biological component whose presence or amount is indicative of said biological or chemical process; and

h. measuring the presence or amount of said ligand associated with said biological component.

58. The method of claim 57 further comprising the step of removing unassociated ligand from each reaction vessel.

59. The method of claim 57 wherein the biological component is a direct participant in or a product of the biological process.

60. The method of claim 57 wherein the ligand is an antibody.

61. The method of claim 60 wherein the antibody is conjugated to horseradish peroxidase.

62. The method of claim 57 or 58 wherein the method further comprises introducing a second

ligand that binds specifically to said first ligand, and wherein the step of measuring comprises measuring levels of bound second ligand.

63. The method of claim 62 further comprising a step of removing unbound second ligand from each reaction vessel.

64. The method of claim 62 wherein in the step of measuring, the bound second ligand is intracellular.

65. The method of claim 62 wherein the second ligand is an antibody.

66. The method of claim 65 wherein the antibody is conjugated to horseradish peroxidase.

67. The method of claim 57, 58 or 62 wherein the step of measuring utilizes a detection technique selected from the group consisting of: chemiluminescence, fluorescence, phosphorescence, radioactivity, colorimetry, Ultra-Violet spectroscopy, and Infra-Red spectroscopy.

68. The method of claim 57 further comprising a step of providing one or more solution containing at least one reagent known to exert an effect on said intracellular biological or chemical process.

69. The method of claim 68 further comprising a step of contacting the cells with said solution under suitable conditions for said reagent to exert an effect on said intracellular biological or chemical process in at least a subset of said cells.

70. The method of claim 57 wherein said intracellular biological or chemical process comprises a covalent modification of an intracellular component.

71. The method of claim 70 wherein said covalent modification is a biosynthetic event.

72. The method of claim 71 wherein said biosynthetic event is nucleic acid synthesis, polypeptide synthesis, peptide cleavage, carbohydrate addition, carbohydrate cleavage, metabolism of cellular components, synthesis of cellular components or intracellular biochemical reaction.

73. The method of claim 70 wherein said covalent modification is a post-translational event.

74. The method of claim 73 wherein said post-translational event is protein glycosylation, methylation, lipidation, isoprenylation, ubiquitination, phosphorylation or acetylation.

75. The method of claim 73 wherein the ligand interacts with the post-translationally modified intracellular component.

76. The method of claim 57 wherein at least a subset of the cells comprises a eukaryotic cell.

77. The method of claim 57 wherein at least a subset of the cells comprises a mammalian cell.

78. The method of claim 57 wherein in the step of providing a plurality of reaction vessels, said reaction vessels are designed to receive a volume of liquid less or equal to approximately 200 microliters.

79. The method of claim 57 wherein in the step of providing a plurality of reaction vessels, said reaction vessels are arranged with sufficient density that individual vessels are separated from one another by no more than about 5 millimeters.

80. The method of claim 57 wherein in the step of providing a plurality of reaction vessels, the number of reaction vessels is greater than or equal to approximately 384 and the reaction vessels occupy a surface smaller than or equal to approximately 128×86 mm^2.

81. A method for screening one or more test compounds; said method comprising steps of:

a. providing a plurality of reaction vessels;
b. providing a plurality of cells;
c. providing one or more test compounds;
d. introducing at least a subset of said cells in each of said reaction vessels;
e. introducing at least one test compound in each of said reaction vessels;
f. contacting at least a subset of said test compounds with said cells in each of said reaction vessels under conditions suitable for at least one of the test compounds to exert an effect on a first intracellular biological or chemical process;
g. contacting a first ligand with said cells in each reaction vessel under conditions suitable for said ligand to associate intracellularly with at least one biological component whose presence or amount is indicative of said biological or chemical process;
h. measuring the presence or amount of first ligand associated with said biological component; and
i. repeating steps a-e;
j. contacting at least a subset of said test compounds with said cells in each of said reaction vessels under conditions suitable for at least one of the test compounds to exert an effect on a first intracellular biological or chemical process;
k. contacting a second ligand with said cells in each reaction vessel under conditions suitable for said second ligand to associate intracellularly with at least one biological component whose presence or amount is indicative of said biological or chemical process;

l. measuring the presence or amount of second ligand associated with said biological component;

m. optionally repeating steps i-l, wherein seconds are thirds; and

n. retaining the information as a functional fingerprint.

REMARKS

Claims 39-56 are currently pending in the subject application. Claims 39, 40, 52 and 54-56 were withdrawn from consideration by the Examiner under 37 C.F.R. § 1.142(b) as being drawn to a non-elected invention. Claims 41-51 and 53 were rejected under 35 U.S.C. § 103 (a) and 35 U.S.C. § 102, first paragraph. Claims 39-56 have been canceled and new claims 57-81 have been added. Applicant would like to point out that the subject matter of cancelled claims 52 and 54-56 has been incorporated into newly added claims 57-81, specifically newly added claims 60-66 and thus the relevance of this subject matter with the present invention will be addressed. This amendment was made in an effort to more particularly state and distinctly claim the invention, and thus Applicant does not concede the correctness of the Examiner's argument that claims 52 and 54-56 (as amended in the response submitted June 5, 2001) are directed to an invention that is independent or distinct from the originally claimed invention. Applicant explicitly reserves the right, however, to pursue the subject matter of any of the canceled claims in continuing or divisional applications. Applicant respectfully submits that the newly added claims are fully supported by the specification and that no new matter is added through the introduction of these claims. Below we address each of the rejections stated in the Final Office Action as if it were applied to the newly added claims.

In view of the Amendments above and the Remarks below, Applicant respectfully requests reconsideration of grounds for rejection of the pending claims set forth in the Final